

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley

TDEC-WPC Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID:

K00002210 **Knoxville Regional Laboratory**

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

K00002210001

Project Name:

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

03/10/2009 10:25

Sampler's Name: County:

Justin Fisher ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009

15:25

Received By:

E McCrary

Field Determinations

:Ha

7.76

pH Units

Chlorine, residual:

Conductivity:

49

uMHO

Temperature:

12.01

Dissolved Oxygen: 11.67

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	12	mg/L	3.8	10	M Chen	3/13/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	13	mg/L	0.7	1	M Chen	3/13/2009

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002210002

Project Name:

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

03/11/2009 10:15

Sampler's Name: County:

Justin Fisher

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC**

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009

15:25

Received By:

E McCrary

Field Determinations

pH:

7.22

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature:

48

9.95

Dissolved Oxygen: 12.46

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	14	mg/L	3.8	10	M Chen	3/13/2009

TEST: Hardness, Calcium	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	18	mg/L	0.7	1	M Chen	3/13/2009

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009

TEST: Residue, Suspended	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210003

Project Name:

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected:

EMORY001.7RO 03/11/2009 10:26

Sampler's Name:

Justin Fisher

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: **Agency Invoiced:**

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

Field Determinations

:Hq 8.07

Chlorine, residual:

223

pH Units

Conductivity:

11.01

uMHO

Temperature: Dissolved Oxygen: 12.48

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total ANALYTE	METHOD: EPA 310.2					
	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	110	mg/L	3.8	10	M Chen	3/13/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	92	mg/L	0.7	1	M Chen	3/13/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210004

Project Name:

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

03/11/2009 10:40

Sampler's Name: County:

Justin Fisher

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC

Send Report To:

327.34-20 **TDEC-WPC**

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

Field Determinations pH: 8.12

Chlorine, residual:

Conductivity: 220

uMHO

Temperature: 10.98 **Dissolved Oxygen: 12.61**

mg/L

pH Units

Other:

Flow: **CFS**

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT UNITS	MDL	MQL	ANALYZED BY:	DATE		
Total Alkalinity	120	mg/L	3.8	10	M Chen	3/13/2009	

TEST: Hardness, Calcium	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	97	mg/L	0.7	1	M Chen	3/13/2009

TEST: Residue, Settleable METHOD: SM 2540F							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009	

TEST: Residue, Suspended	0D						
ANALYTE	RESULT UNITS M		MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210005

Project Name:

Sample Description:

Emory River mile 0.1- Field Duplicate

Sampler Project Name: TVA Ash Spill

Project Site No.:

4

Station No.:

EMORY000.1RO-FD

Date/Time Collected: Sampler's Name:

03/11/2009 10:40 Justin Fisher

County:

ROANE - 73

Sample Matrix:

ROANE - 7: Water

EFO: Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 1

15:25

Received By:

E McCrary

TEST: Alkalinity, Total	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	120	mg/L	3.8	10	M Chen	3/13/2009

Field Determinations

Dissolved Oxygen: 12.63

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other: Flow:

8.12

221

10.90

pH Units

uMHO

mg/L

CFS

TEST: Hardness, Calcium	ME:	THOD: SM 350	0-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	90	mg/L	0.7	1	M Chen	3/13/2009	

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit
MQL - Method Quantitation Limit

K00002210006

Project Name:

Sample Description:

Emory River mile 0.1- Field Blank

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY000.1RO-FB Date/Time Collected: 03/11/2009 10:40

Sampler's Name:

Justin Fisher

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

03/11/2009 15:25

Received By:

Total Alkalinity

E McCrary

TEST: Alkalinity, Total	ME	THOD: EPA 31	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE

mg/L

U

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

3/13/2009

Conductivity:

Temperature:

pH:

Other:

Flow:

3.8

10

M Chen

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MQL	ANALYZED BY:	DATE		
Calcium hardness	U	mg/L	0.7	1	M Chen	3/13/2009	

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	RESULT UNITS MDL		MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009	

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002210007

Project Name:

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

03/11/2009 10:54

Sampler's Name: County:

Justin Fisher

Sample Matrix:

ROANE - 73 Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

Field Determinations

pH:

8.02

pH Units

Chlorine, residual:

Conductivity:

183

uMHO

Temperature: Dissolved Oxygen: 12.51

11.32

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Total Alkalinity	110	mg/L	3.8	10	M Chen	3/13/2009

TEST: Hardness, Calcium	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	79	mg/L	0.7	1	M Chen	3/13/2009

TEST: Residue, Settleable	WE.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210008

Project Name:

Sample Description: Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 12.76

Conductivity:

Temperature:

8.11

228

10.09

pH:

Other: Flow:

pH Units

uMHO

mg/L

CFS

Project Site No.:

Station No.:

Date/Time Collected:

CLINC004.5RO

Sampler's Name:

03/11/2009 11:05

County:

Justin Fisher **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC**

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	120	mg/L	3.8	10	M Chen	3/13/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	87	mg/L	0.7	1	M Chen	3/13/2009

TEST: Residue, Settleable	WE	METHOD: SM 2540F				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	3/12/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	3/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



STATE OF TENNESSEE **DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

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Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID: K00002210

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002210001

Project Name:

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

03/10/2009 10:25

County:

Justin Fisher ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

Field Determinations

pH: 7.76

/ · /

pH Units

Chlorine, residual:

Conductivity:

49

uMHO

Temperature: 12.01

Dissolved Oxygen: 11.67

mg/L

Other:

Flow: CFS

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	03/12/2009				A Wilson	3/12/2009	

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	100	μg/L	2.9	10	M Pattanayek	3/13/2009	

TEST: ICP-MS	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	75	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	u	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	22	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/12/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	0.18J	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	2.2	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	0.16J	μg/L	0.10	1	M Pattanayek	3/12/2009
Manganese	23	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	0.86J	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.13J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	4.7J	μg/L	1.9	5	M Pattanayek	3/12/2009

K00002210001

Project Name:

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO Date/Time Collected:

Sampler's Name:

03/10/2009 10:25 Justin Fisher

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville **TDEC-WPC**

Billing Code: Send Report To: Agency Invoiced:

327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1								
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Mercury	U	μg/L	0.13	0.2	A Wilson	3/12/2009		

Field Determinations

Dissolved Oxygen: 11.67

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.76

49

12.01

pH Units

uMHO.

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210002

Project Name:

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY002.1RO **Date/Time Collected:** 03/11/2009 10:15

Sampler's Name:

Justin Fisher

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville **TDEC-WPC** 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC **TDEC-WPC**

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

Conductivity:	48	uMHO
Temperature:	9.95	
Dissolved Oxygen:	12.46	mg/L
Other:		

Field Determinations

Chlorine, residual:

pH:

Flow: **CFS**

7.22

pH Units

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/12/2009				A Wilson	3/12/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	150	μg/L	2.9	10	M Pattanayek	3/13/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	0.48J	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	23	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	บ	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/12/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	0.26J	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	0.50J	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	0.15J	μg/L	0.10	1	M Pattanayek	3/12/2009
Manganese	37	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	0.96J	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.54J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	4.5J	μg/L	1.9	5	M Pattanayek	3/12/2009

K00002210002

Project Name:

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

03/11/2009 10:15

Sampler's Name:

Justin Fisher

County: **Sample Matrix:** **ROANE - 73**

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY						
Mercury	U	μg/L	0.13	0.2	A Wilson	3/12/2009	

Field Determinations

Dissolved Oxygen: 12.46

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.22

48

9.95

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Project Name:

Sample Description: Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.: 3

Station No.: EMORY001.7RO Date/Time Collected: 03/11/2009 10:26

Sampler's Name: Justin Fisher
County: ROANE - 73

Sample Matrix: Water
EFO: Knoxville
Sampling Agency: TDEC-WPC
Billing Code: 327.34-20
Send Report To: TDEC-WPC
Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received: 03/11/2009 15:25

Received By: E McCrary

Field Determinations
pH: 8.07 pH Units
Chlorine, residual:

Conductivity: 223 uMHO Temperature: 11.01

Dissolved Oxygen: 12.48 mg/L

Other:

Flow: CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/12/2009				A Wilson	3/12/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	100	μg/L	2.9	10	M Pattanayek	3/13/2009	

TEST: ICP-MS	WE.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	110	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	36	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/Ĺ	0.41	1	M Pattanayek	3/12/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	0.16J	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	4.0	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	0.29J	μg/L	0.10	1	M Pattanayek	3/12/2009
Manganese	28	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.18J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	4.3J	μg/L	1.9	5	M Pattanayek	3/12/2009

K00002210003

Project Name:

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

3

Station No.: EMORY001.7RO Date/Time Collected: 03/11/2009 10::

Sampler's Name:

03/11/2009 10:26 Justin Fisher

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Billing Code: Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	3/12/2009

Field Determinations

Dissolved Oxygen: 12.48

Chlorine, residual:

Conductivity:

Temperature:

8.07

223

11.01

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Project Name:

Sample Description: Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.: 4

Station No.: EMORY000.1RO Date/Time Collected: 03/11/2009 10:40

Sampler's Name: Justin Fisher
County: ROANE - 73
Sample Matrix: Water

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-WPC

Billing Code: 327.34-20

Send Report To: TDEC-WPC

Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received: 03/11/2009 15:25

Received By: E McCrary

Field Determinations
pH: 8.12 pH Units
Chlorine, residual:
Conductivity: 220 uMHO

Conductivity: 220 uM Temperature: 10.98

Dissolved Oxygen: 12.61

Other: CFS

mg/L

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/12/2009				A Wilson	3/12/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	110	μg/L	2.9	10	M Pattanayek	3/13/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	130	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	35	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/12/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	0.19J	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	1.5	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	0.24J	μ g/L	0.10	1	M Pattanayek	3/12/2009
Manganese	29	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/ L	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.11J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	1.9J	μg/L	1.9	5	M Pattanayek	3/12/2009

K00002210004

Project Name:

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

EMORY000.1RO Station No.: Date/Time Collected: 03/11/2009 10:40

Sampler's Name:

Justin Fisher

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	3/12/2009

Field Determinations

Dissolved Oxygen: 12.61

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

8.12

220

10.98

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Project Name:

Sample Description: Emory River mile 0.1- Field Duplicate

Sampler Project Name: TVA Ash Spill

Project Site No.: 4

Station No.: EMORY000.1RO-FD Date/Time Collected: 03/11/2009 10:40

Sampler's Name: Justin Fisher County: ROANE - 73

Sample Matrix: Water
EFO: Knoxville
Sampling Agency: TDEC-WPC

Billing Code: 327.34-20
Send Report To: TDEC-WPC
Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received: 03/11/2009 15:25

Received By: E McCrary

pH: 8.12 pH Units
Chlorine, residual:
Conductivity: 221 uMHO

Conductivity: 221 uM Temperature: 10.90

Field Determinations

Dissolved Oxygen: 12.63 mg/L

Other: CFS

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	03/12/2009				A Wilson	3/12/2009	

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	110	μg/L	2.9	10	M Pattanayek	3/13/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	35	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/12/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	0.19J	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	1.3	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	0.26J	μg/L	0.10	1	M Pattanayek	3/12/2009
Manganese	34	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.08J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	11	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	4.3J	μg/L	1.9	5	M Pattanayek	3/12/2009

K00002210005

Project Name:

Sample Description:

Emory River mile 0.1- Field Duplicate

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected: EMORY000.1RO-FD 03/11/2009 10:40

Sampler's Name:

Justin Fisher

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC TDEC-WPC**

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	3/12/2009

Field Determinations

Dissolved Oxygen: 12.63

Chlorine, residual:

Conductivity:

Temperature:

8.12

221

10.90

pH:

Other:

Flow:

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210006

Project Name:

Sample Description:

Emory River mile 0.1- Field Blank

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

EMORY000.1RO-FB

Date/Time Collected: Sampler's Name:

03/11/2009 10:40

County:

Justin Fisher

Sample Matrix:

ROANE - 73

EFO: Sampling Agency: Water Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC**

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/12/2009				A Wilson	3/12/2009

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

Conductivity:

Temperature:

pH:

Other:

Flow:

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	U	μg/L	2.9	10	M Pattanayek	3/13/2009

TEST: ICP-MS	ME:	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	U	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	U	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/12/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	U	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	0.49J	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	U	μg/L	0.10	1	M Pattanayek	3/12/2009
Manganese	U	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	U	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.04J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	9.4	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	1.9J	μg/L	1.9	5	M Pattanayek	3/12/2009

K00002210006

Project Name:

Sample Description:

Emory River mile 0.1- Field Blank

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO-FB

Date/Time Collected: Sampler's Name:

03/11/2009 10:40

County:

Justin Fisher

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced:

Priority Date: Date/Time Received:

03/11/2009

15:25

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.13	0.2	A Wilson	3/12/2009

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

Conductivity:

Temperature:

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210007

Project Name:

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5

Station No.:

CLINC002.3RO

Date/Time Collected:

03/11/2009 10:54

Sampler's Name: County:

Justin Fisher

Sample Matrix:

ROANE - 73

Sampa

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	03/12/2009				A Wilson	3/12/2009	

Field Determinations

Dissolved Oxygen: 12.51

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

8.02

183

11.32

pH Units

uMHO

mg/L

CFS

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	110	μg/L	2.9	10	M Pattanayek	3/13/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	130	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	35	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/12/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	0.19J	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	1.8	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	0.23J	μg/L	0.10	1	M Pattanayek	3/12/2009
Manganese	30	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/Ŀ	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.05J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	8.8	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	2.7J	µg/L	1.9	5	M Pattanayek	3/12/2009

K00002210007

Project Name:

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

5

Station No.:

CLINC002.3RO

Date/Time Collected:

Project Site No.:

03/11/2009 10:54

Sampler's Name:

Justin Fisher

County: Sample Matrix:

ROANE - 73

Water

EFO:

Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20

Send Report To:
Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Mercury	ercury METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	3/12/2009

Field Determinations

Dissolved Oxygen: 12.51

183

11.32

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002210008

Project Name:

Sample Description: Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Field Determinations

Dissolved Oxygen: 12.76

Conductivity:

Temperature:

pH:

Other:

Flow:

8.11

228

10.09

pH Units

uMHO

mg/L

CFS

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

03/11/2009 11:05

Sampler's Name: County:

Justin Fisher

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

E McCrary

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/12/2009				A Wilson	3/12/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	110	μg/L	2.9	10	M Pattanayek	3/13/2009

TEST: ICP-MS	METHOD: EPA 200.8					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	110	μg/L	6.4	10	M Pattanayek	3/12/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	3/12/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/12/2009
Barium	34	μg/L	2.5	5	M Pattanayek	3/12/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/12/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/12/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/12/2009
Cobalt	0.18J	μg/L	0.04	1	M Pattanayek	3/12/2009
Copper	1.8	μg/L	0.38	1	M Pattanayek	3/12/2009
Lead	0. 24 J	μg/L	0.10	1	M Pattanayek	3/12/2009
Manganese	32	μg/L	0.42	1	M Pattanayek	3/12/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	3/12/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/12/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	3/12/2009
Thallium	0.05J	μg/L	0.03	1	M Pattanayek	3/12/2009
Vanadium	4.9J	μg/L	3.4	5	M Pattanayek	3/12/2009
Zinc	3.4J	μg/L	1.9	5	M Pattanayek	3/12/2009

K00002210008

Project Name:

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

CLINC004.5RO

Date/Time Collected:

03/11/2009 11:05

Sampler's Name:

Justin Fisher

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: **TDEC-WPC** 327.34-20 **TDEC-WPC**

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

03/11/2009 15:25

Received By:

TEST: Mercury

E McCrary

METHOD: EPA 245.1

Field Determinations

Dissolved Oxygen: 12.76

Conductivity:

Temperature:

8.11

228

10.09

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE RESULT UNITS MDL MQL **ANALYZED BY:** DATE

Mercury U μg/L 0.13 0.2 A Wilson 3/12/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit